

Patent Claims

1. A process for inspecting transparent containers (B), in which every container (B) is illuminated and at least two exposures of the same container are produced and evaluated by a single CCD camera, whereby the contour of the container is imaged with the one exposure for the evaluation of the contour, and the wall of the container is imaged with the other exposure for the evaluation of the wall, **characterized in that**, between the two exposures, the exposure time of the CCD camera (K) is changed over from an exposure time for the container wall to an exposure time for the container profile.
2. A process in accordance with claim 1, **characterized in that**, the two exposures are each formed in the same intensity of illumination, particularly by means of flashes.
3. A process in accordance with claim 1, **characterized in that**, the two exposures of a container (B) are carried out and stored in memory one immediately after the other, while the evaluation of the exposures is carried out in parallel or in succession, one after the other.
4. A device (V) for inspecting transparent containers (B), particularly beverage bottles, with a container-conveying device (F), at least one source of illumination (L), and a single CCD camera (K) which is connected with an evaluation device (A) for the exposures of the containers, whereby the exposures of the walls and the exposures of the container profile can be produced by means of the CCD camera (K), **characterized in that**, a control device (C2) for changing the sensitivity of exposure of the CCD camera (K) between a sensitivity of exposure for the container profile and a sensitivity of exposure for the container wall is provided.
5. A device in accordance with claim 4, **characterized in that**, the control (C2) has at least one electronic control circuit, by means of which the exposure time of the CCD camera (K) can be changed in at least two trigger positions (T1, T2).
6. A device in accordance with claim 4, **characterized in that**, the source of illumination (L) comprises at least one LED radiant field (3) which can be activated in the individual bottles.

7. A device in accordance with claim 6, **characterized in that**, a flash time adjusting device (C1), which is preferably an electronic control circuit adjusting the flash time for the change of the intensity of illumination by means of different trigger positions, is coordinated with the LED radiant field (3).

2023-04-04 15:00

Summary

In a process for inspecting transparent containers (B), in which every container is illuminated and at least two exposures of the same container are produced by means of a single CCD camera (K) and evaluated, whereby one exposure images the container profile and the other exposure images the container wall, the exposure time of the CCD camera (K) is changed, between the two exposures, from an exposure time for a container to an exposure time for a container profile. A control device (C2) for changing the sensitivity of exposure of the CCD camera (K) is provided in the device (Fig. 1).